

# Pensamento, emoções e imunidade: há relação?

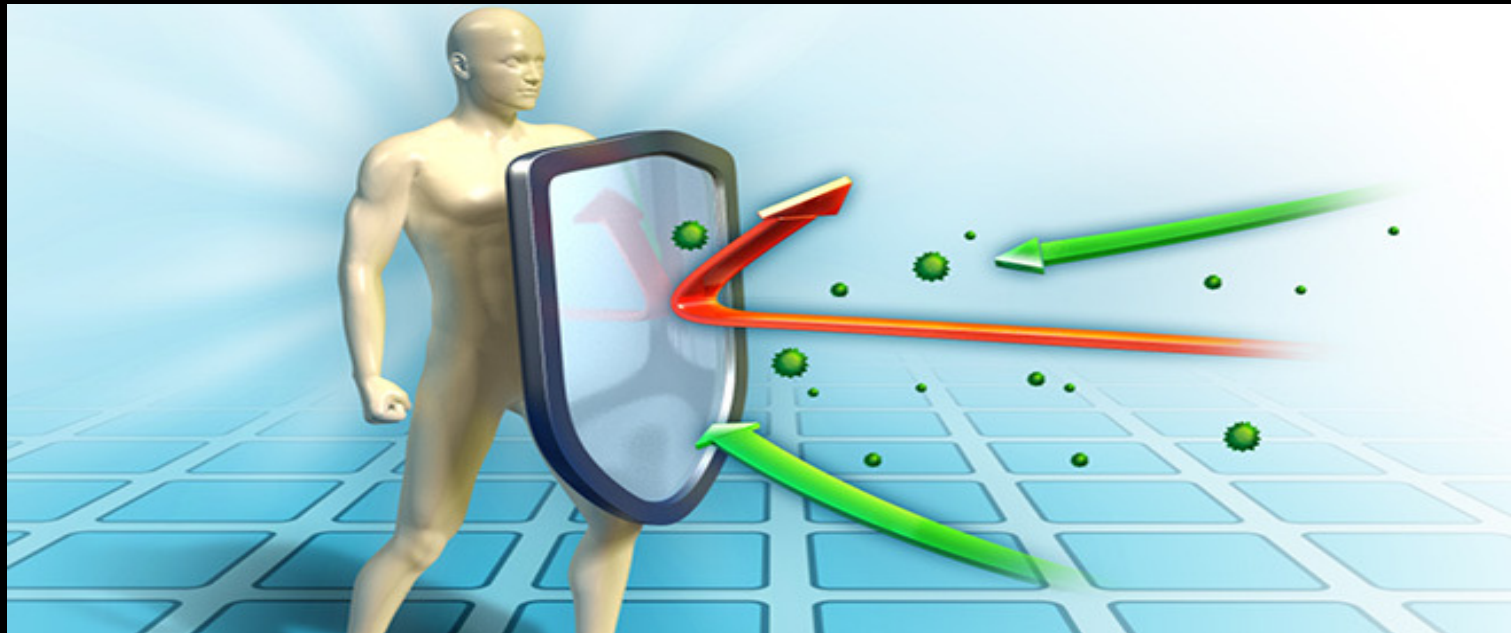
Viena, Outubro 2024

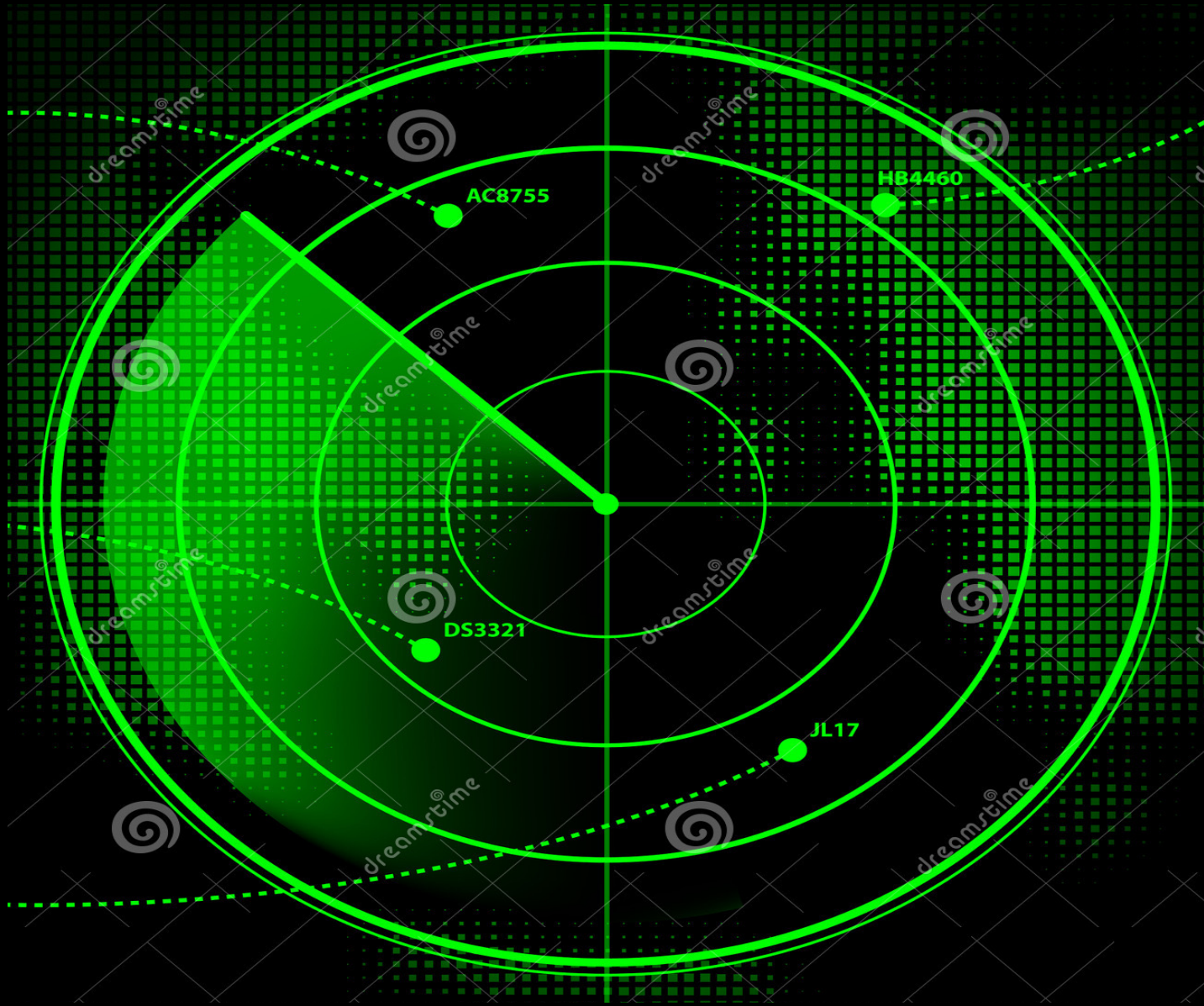
**Vicente Pessoa**

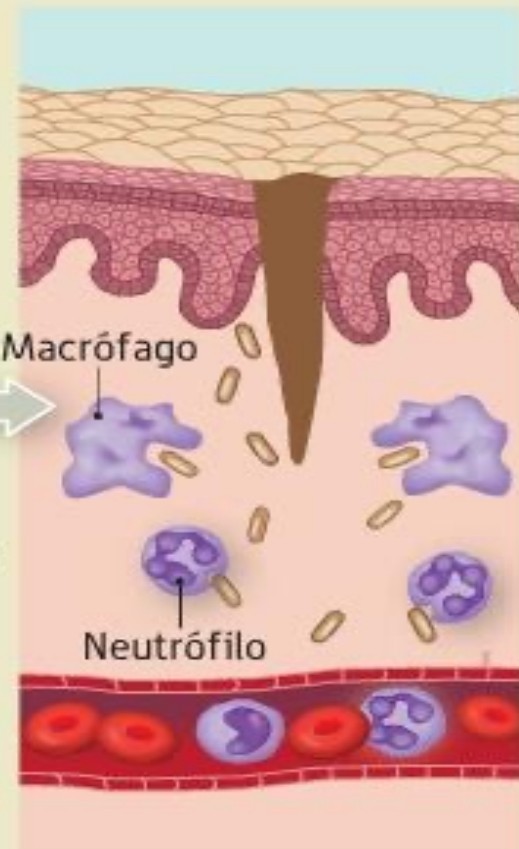
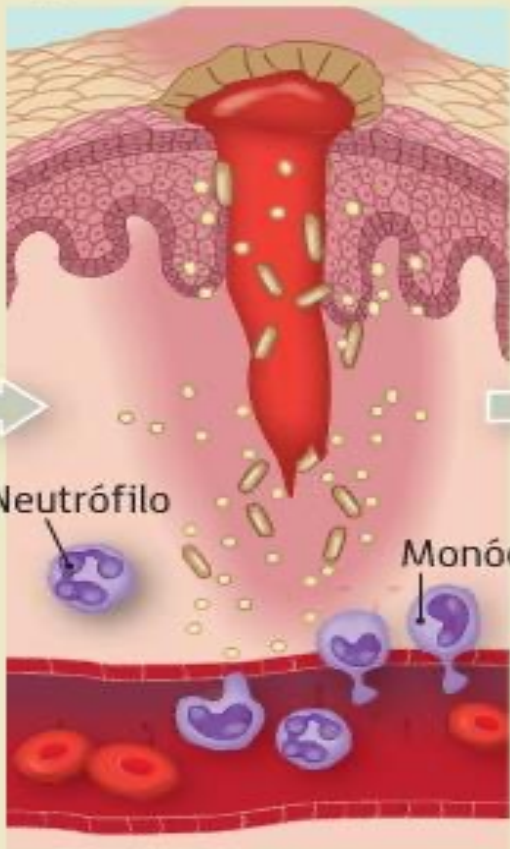
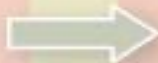
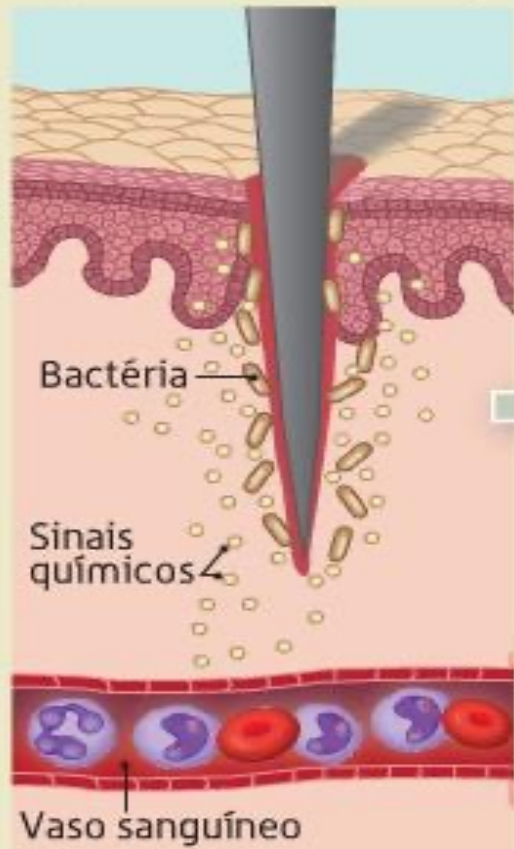
Associação Médico-Espírita de Goiânia



# Quais a funções do sistema imunológico?









Microrganismo



### Imunidade inata



Barreiras epiteliais



Fagócitos



Células dendríticas



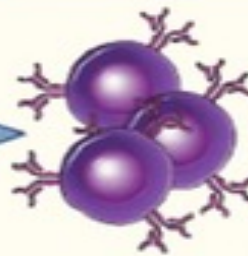
Complemento



Células NK

### Imunidade adaptativa

Linfócitos B



Anticorpos

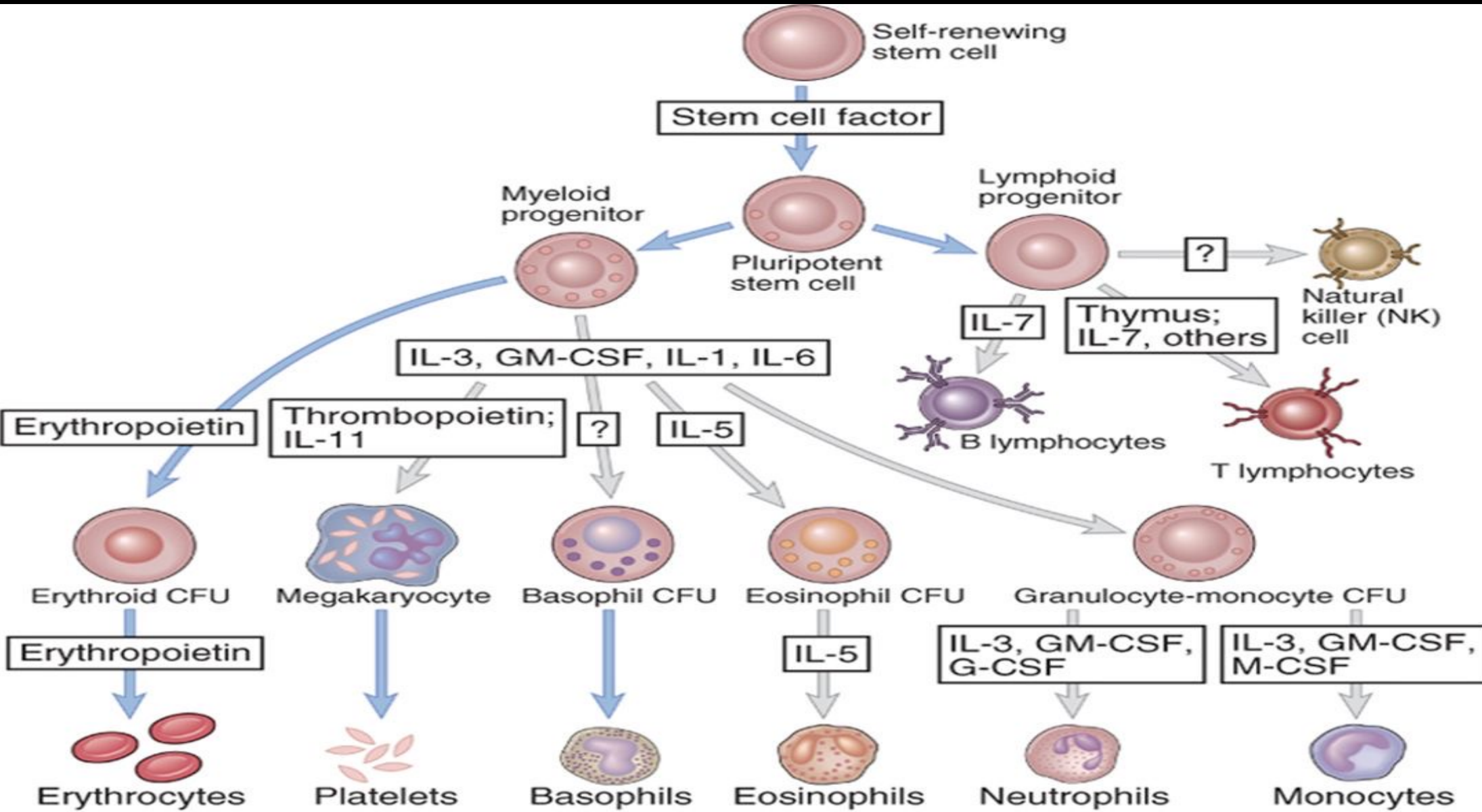


Linfócitos T

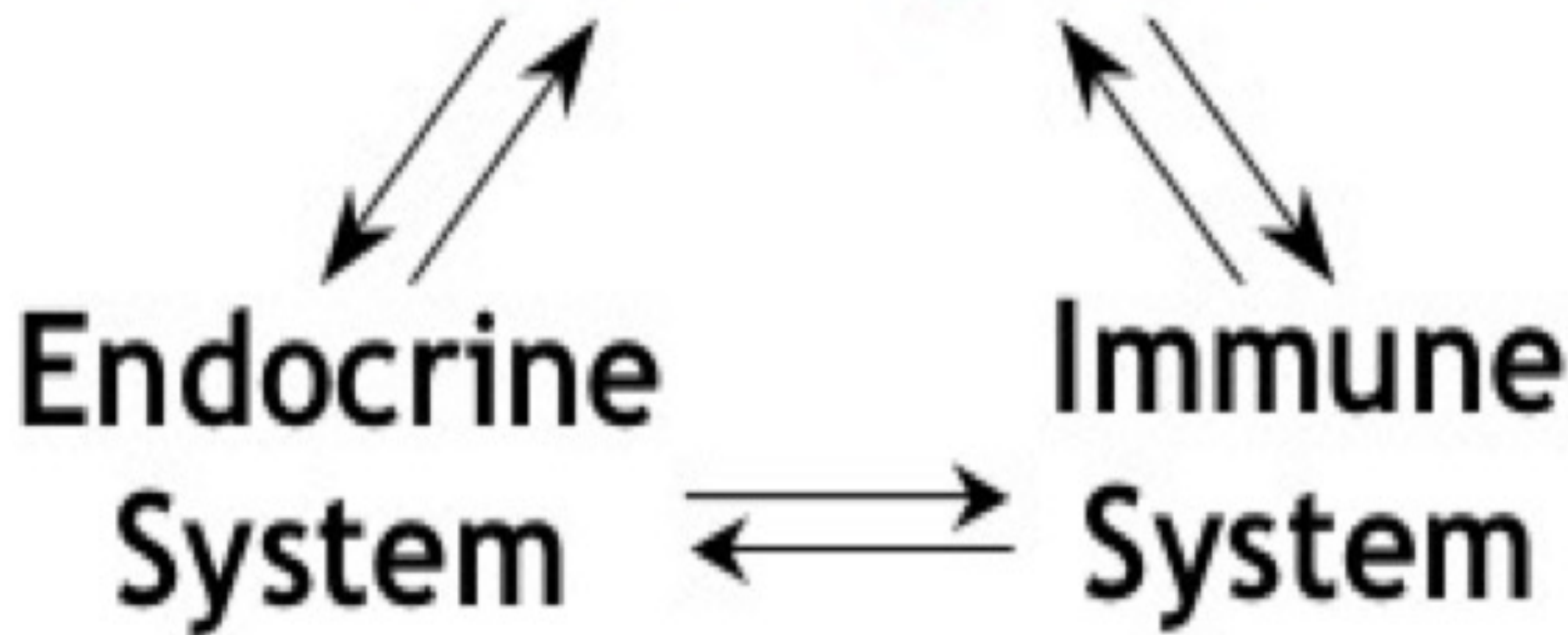


Células T efetoras





# Nervous System

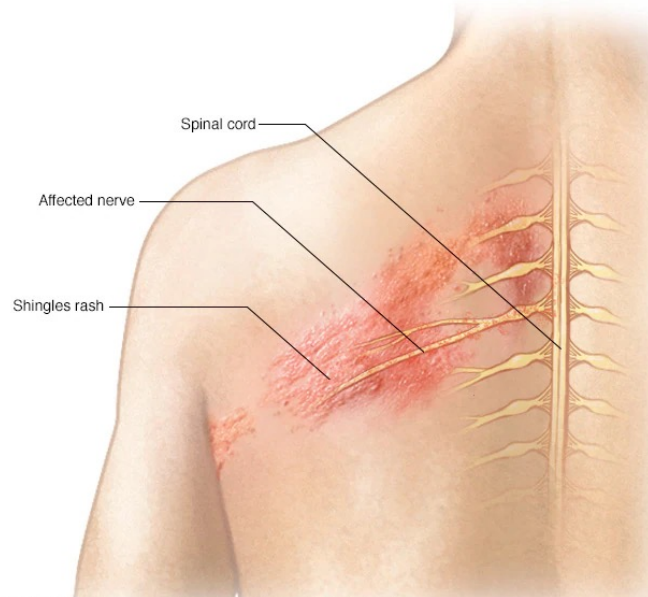






# Contusões emocionais

## Herpes-Zóster (Shingles)

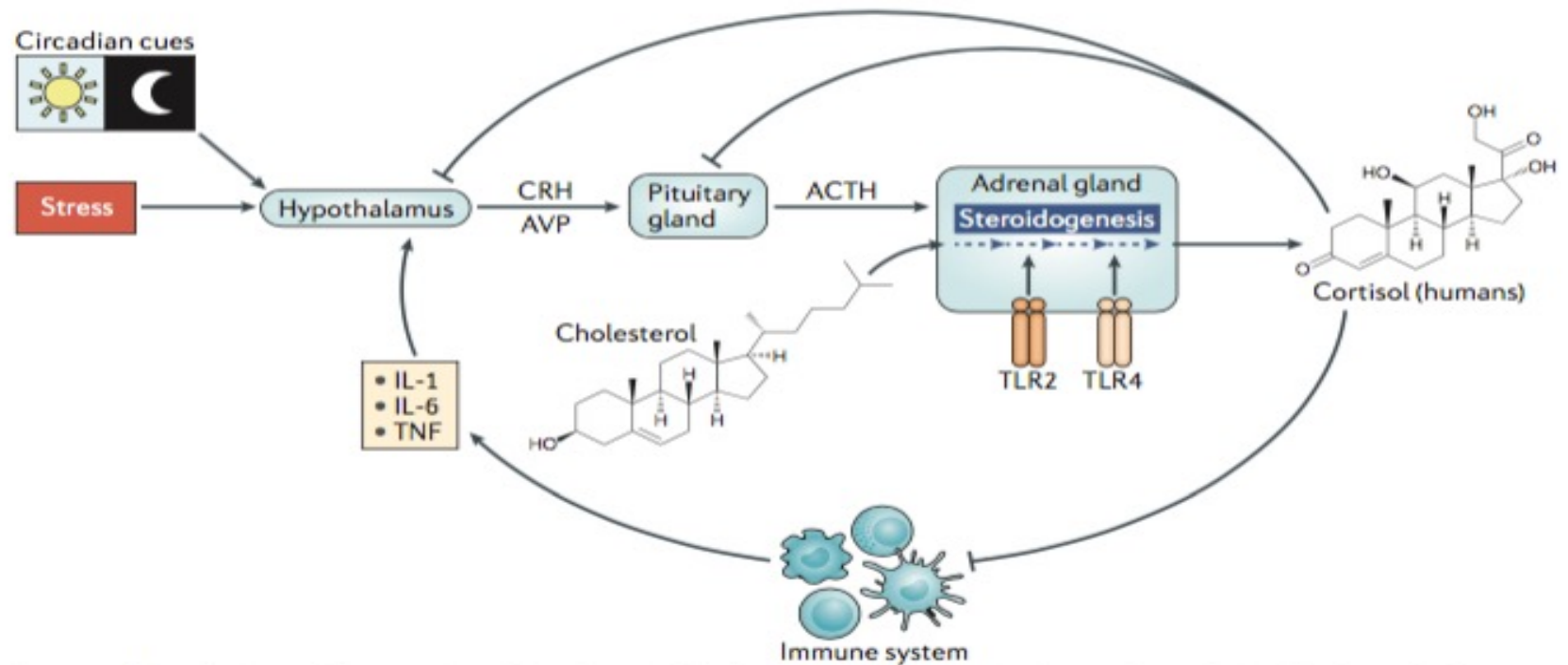


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## Herpes-simplex



## REVIEWS



\*Apresentação de antígenos

\*Diferenciação de linfócitos

Immune regulation by glucocorticoids. Nature Reviews, vol 17, 2017e

NEWS | 08 August 2024

**nature**

## How the stressed-out brain can weaken the immune system

Stress leads to disarray of the gut microbiome, which in turn causes inflammation and a drop in the body's ability to fend off infection.



The vagus nerve connects the brain region called the amygdala (red; artist's illustration) to nerves for the Brunner's glands in the gut. Credit: Sebastian Kaulitzki/Science Photo Library

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- 80 cônjuges ou pais em luto **versus** 80 pessoas sem luto
- 02 semanas (agudo) e 06 meses (crônico)
- Estado pró-inflamatório e trombótico



Buuckley T, Morel-Kopp MC, Ward C, Bartrop R, McKinley S, Mihailidou AS, et al. Inflammatory and thrombotic changes in early bereavement: a prospective evaluation. *Eur J Prevent Cardiol* 2012;19:1145–52.

- 260 perderam parentes próximos **versus** 269 sem perdas 05 a 63 meses antes
- 34 a 84 anos
- IL-6 e sE-Selectina



Cohen M, Granger S, Fuller-Thomson E. The association between bereavement and biomarkers of inflammation. Behav Med 2013.

- **Aumento absoluto e percentual de linfócitos CD4 helpers e CD8 citotóxicos**
- **Imunidade celular super ativada**



**Bielas H, Jud A, Lips U, Reichenbach J, Landolt MA. Increased number of activated T cells in lymphocyte subsets of maltreated children: data from a pilot study. J Psychosom Res 2012;73:313–8**



Available online at [www.sciencedirect.com](http://www.sciencedirect.com)



Autoimmunity Reviews 5 (2006) 523–527



[www.elsevier.com/locate/autrev](http://www.elsevier.com/locate/autrev)

## The immune system and happiness

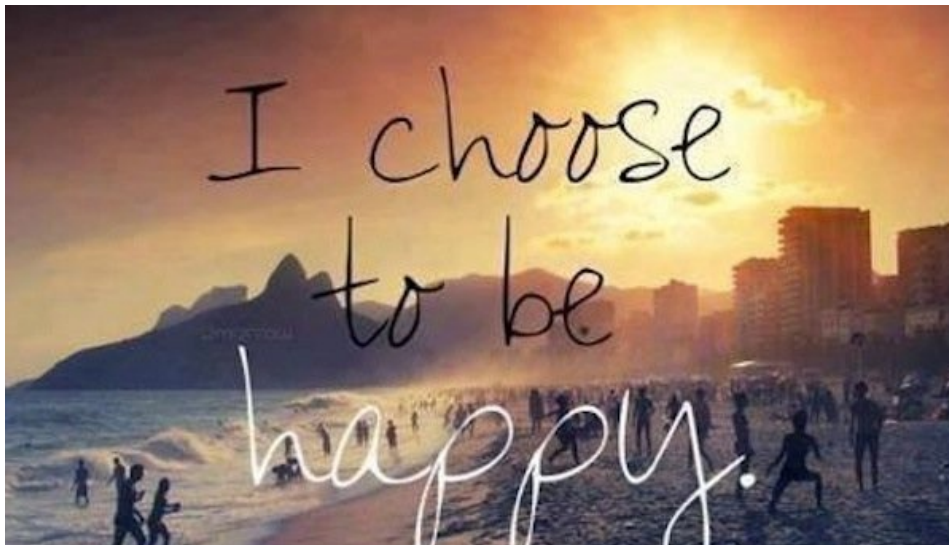
Yoram Barak \*

*Psychogeriatric Department, Abarbanel Mental Health Center, Bat-Yam and the Sackler School of Medicine,  
Tel-Aviv University, 15 KKL Street, Bat-Yam, Israel*

Available online 21 March 2006

### Take-home messages

- Happiness and other positive emotions have been studied in the psychological domain with little data as to its physiology and immune interaction.
- Emotions are intimately involved in the initiation or progression of cancer, HIV, cardiovascular disease, and autoimmune disorders.
- Existing data supports the hypothesis that individuals characterized by a more negative affective style poorly recruit their immune response and may be at risk for illness more so than those with a positive affective style.
- Eudaimonic well-being, addressing ideas of self-development, personal growth and purposeful engagement is associated with immune biomarkers reflecting a more stable system configuration.





**Review**

**Therapeutic Benefits of Laughter in Mental Health: A Theoretical Review**

**JongEun Yim<sup>1</sup>**

<sup>1</sup>Department of Physical Therapy, Sahmyook University, Seoul, Republic of Korea



In modern society, fierce competition and socioeconomic interaction stress the quality of life, causing a negative influence on a person's mental health. Laughter is a positive sensation, and seems to be a useful and healthy way to overcome stress. Laughter therapy is a kind of cognitive-behavioral therapies that could make physical, psychological, and social relationships healthy, ultimately improving the quality of life. Laughter therapy, as a non-pharmacological, alternative treatment, has a positive effect on the mental health and the immune system. In addition, laughter therapy does not require specialized preparations, such as suitable facilities and equipment, and it is easily accessible and acceptable. For these reasons, the medical community has taken notice and attempted to include laughter therapy to more traditional therapies. Decreasing stress-making hormones found in the blood, laughter can mitigate the effects of stress. Laughter decreases serum levels of cortisol, epinephrine, growth hormone, and 3,4-dihydrophenylacetic acid (a major dopamine catabolite), indicating a reversal of the stress response. Depression is a disease, where neurotransmitters in the brain, such as norepinephrine, dopamine, and serotonin, are reduced, and there is something wrong in the mood control circuit of the brain. Laughter can alter dopamine and serotonin activity. Furthermore, endorphins secreted by laughter can help when people are uncomfortable or in a depressed mood. Laughter therapy is a noninvasive and non-pharmacological alternative treatment for stress and depression, representative cases that have a negative influence on mental health. In conclusion, laughter therapy is effective and scientifically supported as a single or adjuvant therapy.

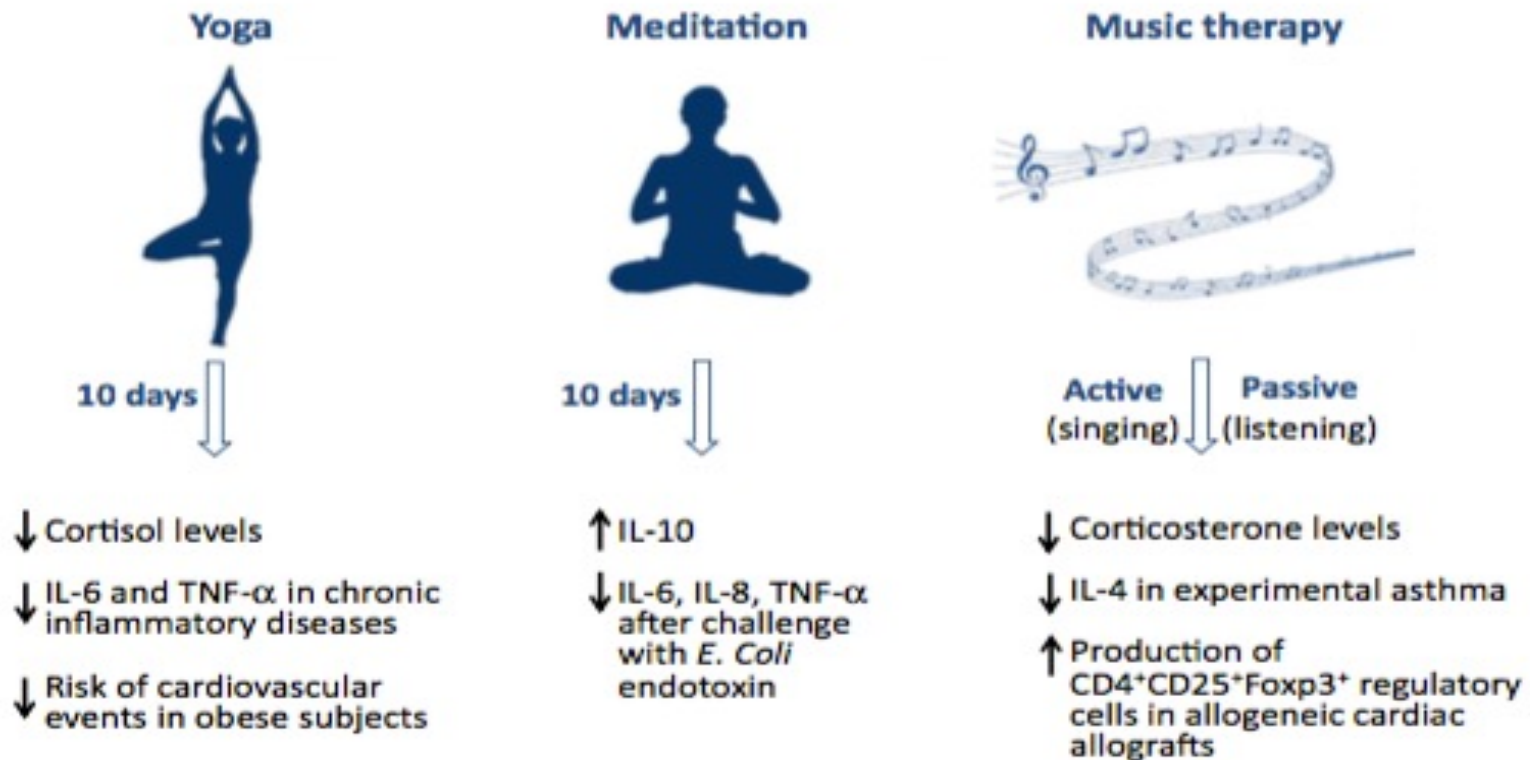
**Keywords:** alternative treatment; depression; laughter; mental health; stress

Tohoku J. Exp. Med., 2016 July, 239 (3), 243-249. © 2016 Tohoku University Medical Press

Table 2. Physiological and psychological effects of laughter.

Physiological outcomes	Psychological outcomes
<ul style="list-style-type: none"> <li>Exercises and relaxes muscles</li> <li>Improves respiration</li> <li>Stimulates circulation</li> <li>Decreases stress hormones</li> <li>Increases the immune system's defenses</li> <li>Elevates pain threshold and tolerance</li> <li>Enhances mental functioning</li> </ul>	<ul style="list-style-type: none"> <li>Reduces stress, anxiety, and tension, and counteracts symptoms of depression</li> <li>Elevates mood, self-esteem, hope, energy, and vigor</li> <li>Enhances memory and creative thinking</li> <li>Improves interpersonal interaction</li> <li>Increases friendliness and helpfulness</li> <li>Promotes psychological well-being</li> <li>Improves quality of life and patient care</li> <li>Intensifies mirth and is contagious</li> </ul>

One non-medical method of stress reduction is laughing and being in pleasant environments. Laughter is a positive sensation, and seems to be a useful and healthy way to overcome stress. Decreasing stress-making hormones found in the blood, laughter can mitigate the effects of stress (Farifteh et al. 2014). A popular theory for understanding laughter includes its evolution as a relief of nervous energy, potentially making it an ideal antidote for stressful situations. This is supported by the empiric observation that laughter decreases serum levels of cortisol, epinephrine, growth hormone, and 3,4-dihydrophenylacetic acid (a major dopamine catabolite), indicating a reversal of the stress response (Berk et al. 1989a). In a previous study, 33 subjects viewed a humorous video and, subsequently, stress level and immune function (natural killer cell activity) were recorded. As a result, stress level decreased and immune function increased in the experimental group compared with the control group (Bennett et al. 2003).



## Relaxation Response

**Smile! It is in your blood.** Biochemical Pharmacology 91 (2014) 287–292

## Mozart, Music and Medicine

Ernest K.J. Pauwels<sup>a,b</sup> Duccio Volterrani<sup>b</sup> Giuliano Mariani<sup>b</sup>  
Magdalena Kostkiewics<sup>c</sup>

<sup>a</sup>University Medical Center Leiden, Leiden, The Netherlands; <sup>b</sup>Pisa Medical School, Pisa University, Pisa, Italy;  
<sup>c</sup>Jagiellonian University Collegium Medicum, Hospital John Paul II, Krakow, Poland

One of the early indications of the relationship between the immune system and music has been found in a single trial experiment by Bittman et al. [54], who provided evidence that group drumming increased NK cell activity, lymphokine-activated killer cell activity and the dehydroepiandrosterone-to-cortisol ratio in normal subjects. Likewise, Koyama et al. [55] found that recreational music making modulates immunological responses in adults demarcated at the age of 65 years. Significant increases in the number of lymphocytes, T cells, CD4+ T cells and memory T cells as well as in the production of IFN- $\gamma$  and IL-6 were observed. Contrary to what is expected with stress, increases in Th1 cytokine IFN- $\gamma$  and unchanged Th2 cytokine IL-4 and IL-10 levels were noted. Similar results were obtained by Wachi et al. [56], who



# Sir William Osler (1849-1919)

Osler W. **The faith that heals.**

Br Med J 1910;1(2581):1470-2.



THE FAITH THAT HEALS.  
BY  
WILLIAM OSLER, M.D. F.R.S.,  
REGIUS PROFESSOR OF MEDICINE, OXFORD UNIVERSITY.

Nothing in life is more wonderful than faith—the one great moving force which we can neither weigh in the balance nor test in the crucible. Intangible as the ether, ineluctable as gravitation, the radium of the moral and mental spheres, mysterious, undefinable, known only by its effects, faith pours out an unending stream of energy while abating not jot nor tittle of its potency. Well indeed did St. Paul break out into the well-known glorious panegyric, but even this scarcely does justice to the Hertha of the psychical world, distributing force as from a great storage battery, without money and without price to the children of men.

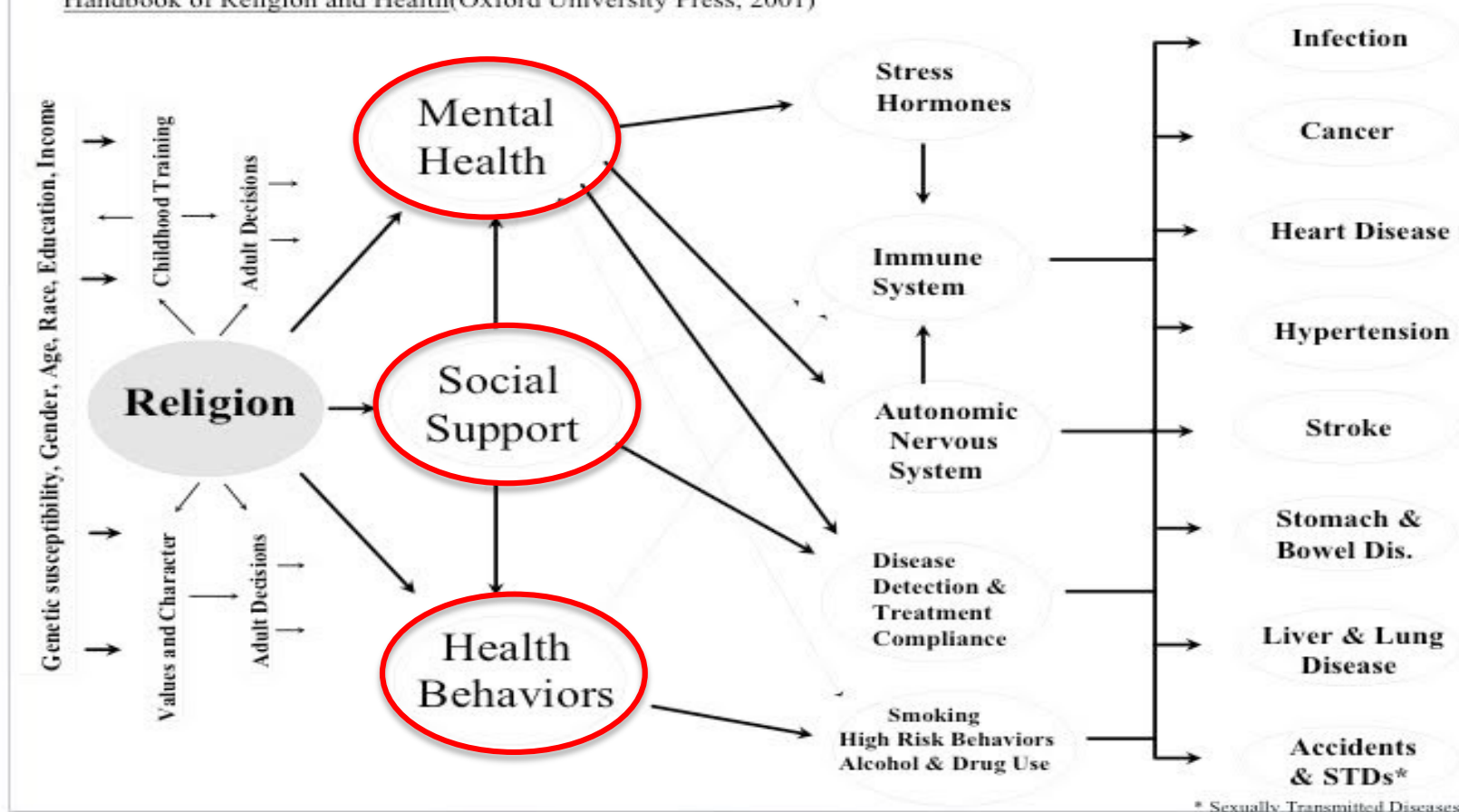
Three of its relations concern us here. The most active manifestations are in the countless affiliations which man in his evolution has worked out with the unseen, with the invisible powers, whether of light or of darkness, to which from time immemorial he has erected altars and shrines. To each one of the religions, past or present, faith has been the Jacob's ladder. Creeds pass; an inexhaustible supply of faith remains, with which man proceeds to rebuild temples, churches, chapels, and shrines. As Swinburne says in that wonderful poem, *The Altar of Righteousness*:

God by God flits past in thunder, till his glories turn to shades:  
God to God bears wondering witness how his gospel flames and fades.  
More was each of these, while yet they were, than man their servant seemed:  
Dead are all of these, and man survives who made them while he dreamed.

And all this has been done by faith, and faith alone. Christendom lives on it, and countless thousands are happy in the possession of that most touching of all confessions, "Lord! I believe; help Thou my unbelief." But, with its Greek infection, the Western mind is a poor transmitter of faith, the apotheosis of which must be sought in the religions of the East. The Nemesis of faith is that neither in its intensity nor in its effects does man find any warrant of the worthiness of the object on which it is lavished—the followers of Joe Smith, the Mormon, are as earnest and believing as are those of Confucius!

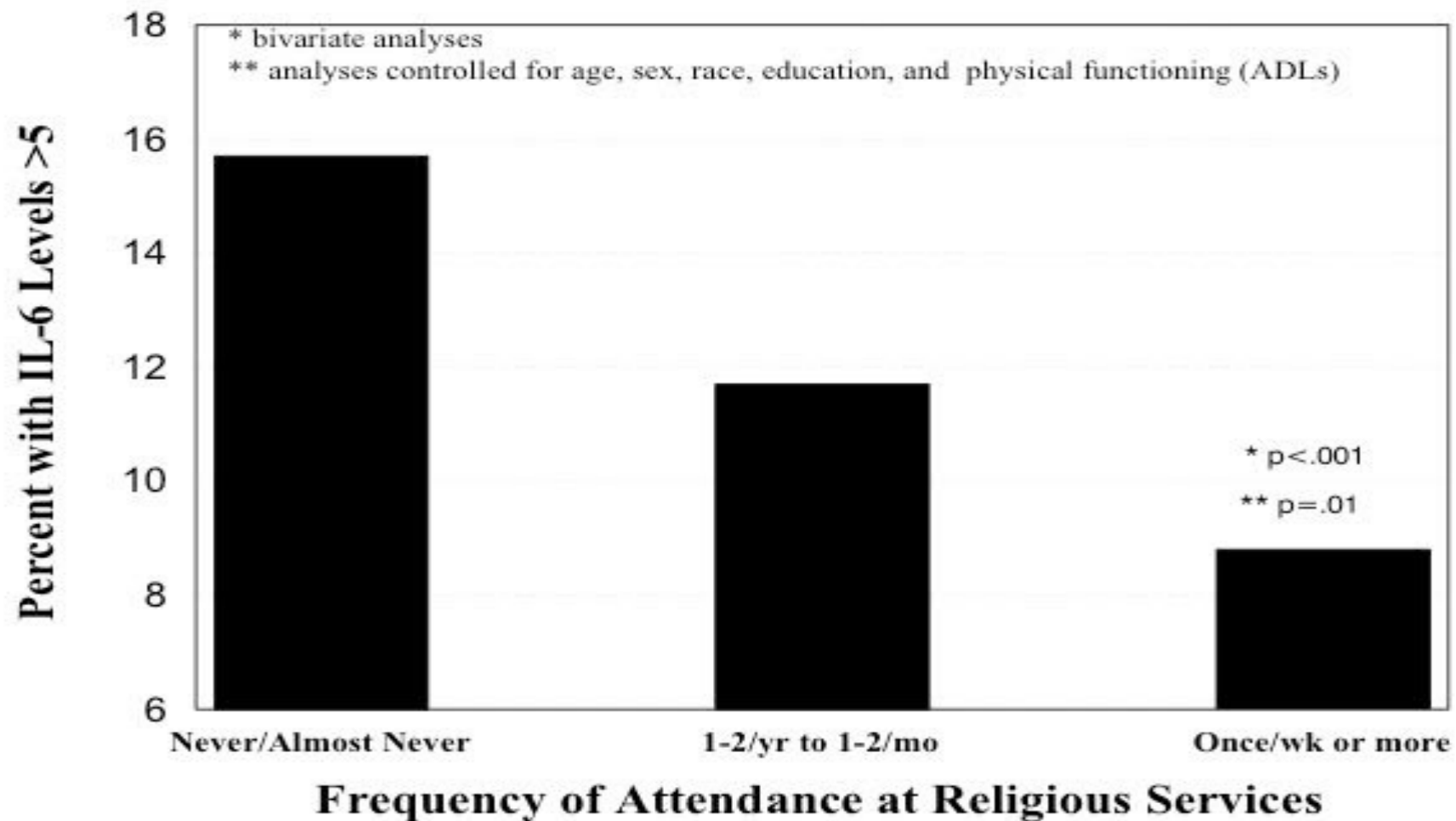
# Model of Religion's Effects on Health

Handbook of Religion and Health(Oxford University Press, 2001)



## Serum IL-6 and Attendance at Religious Services

(1675 persons age 65 or over living in North Carolina, USA)



**Citation:** International Journal of Psychiatry in Medicine 1997; 27:233-250

# Risk and protective factors for meningococcal disease in adolescents: matched cohort study

Joanna Tully, Russell M Viner, Pietro G Coen, James M Stuart, Maria Zambon, Catherine Peckham, Clare Booth, Nigel Klein, Ed Kaczmarek, Robert Booy

**Table 4** Multivariate analysis of risk factors for meningococcal disease

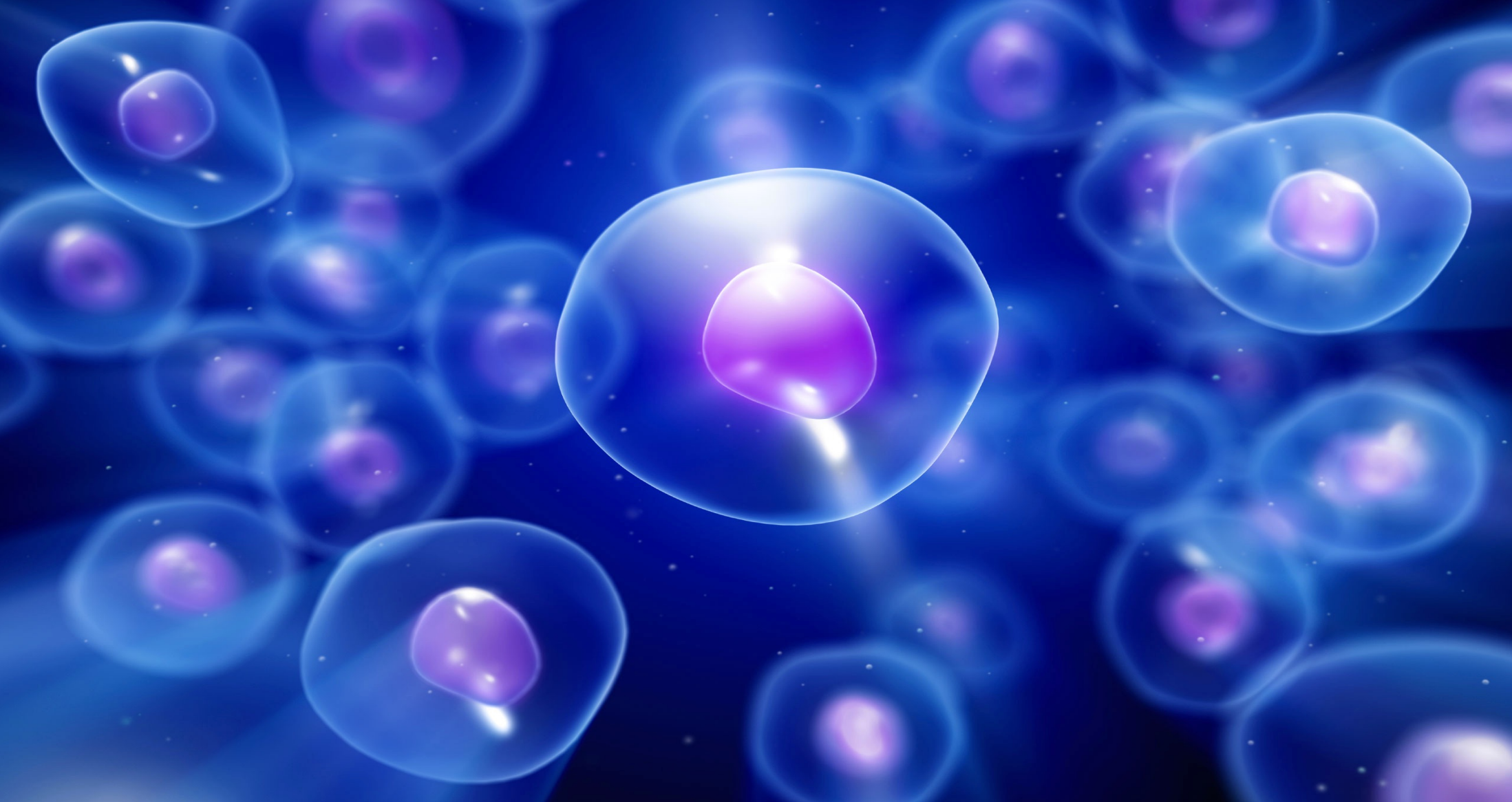
Exposures	Matched odds ratio (95% CI)		P value
Vaccinated against serogroup C meningococci	0.12	(0.04 to 0.37)	<0.001
Multiple intimate kissing contacts*	3.7	(1.7 to 8.1)	0.001
Attended one or more religious ceremonies*	0.10	(0.02 to 0.58)	0.01
Preceding illness*	2.9	(1.4 to 5.9)	0.003
Born at less than 37 completed weeks of pregnancy	3.7	(1.0 to 13.5)	0.05
<b>Occupational status (odds ratio relative to being employed)</b>			
University student	3.4	(1.2 to 10.0)	0.03
School student	3.3	(0.8 to 13.4)	0.1

Odds ratio adjusted for all other factors shown and controlled for parental car or home ownership and meningococcal disease season. Data for all variables available in 130 pairs. Excluding the gestation variable did not confound odds ratio estimates and model then included 136 pairs.

\*In the fortnight period before illness (cases) or interview (controls).

# *Animáculos infinitesimais, que se revelam domesticados*

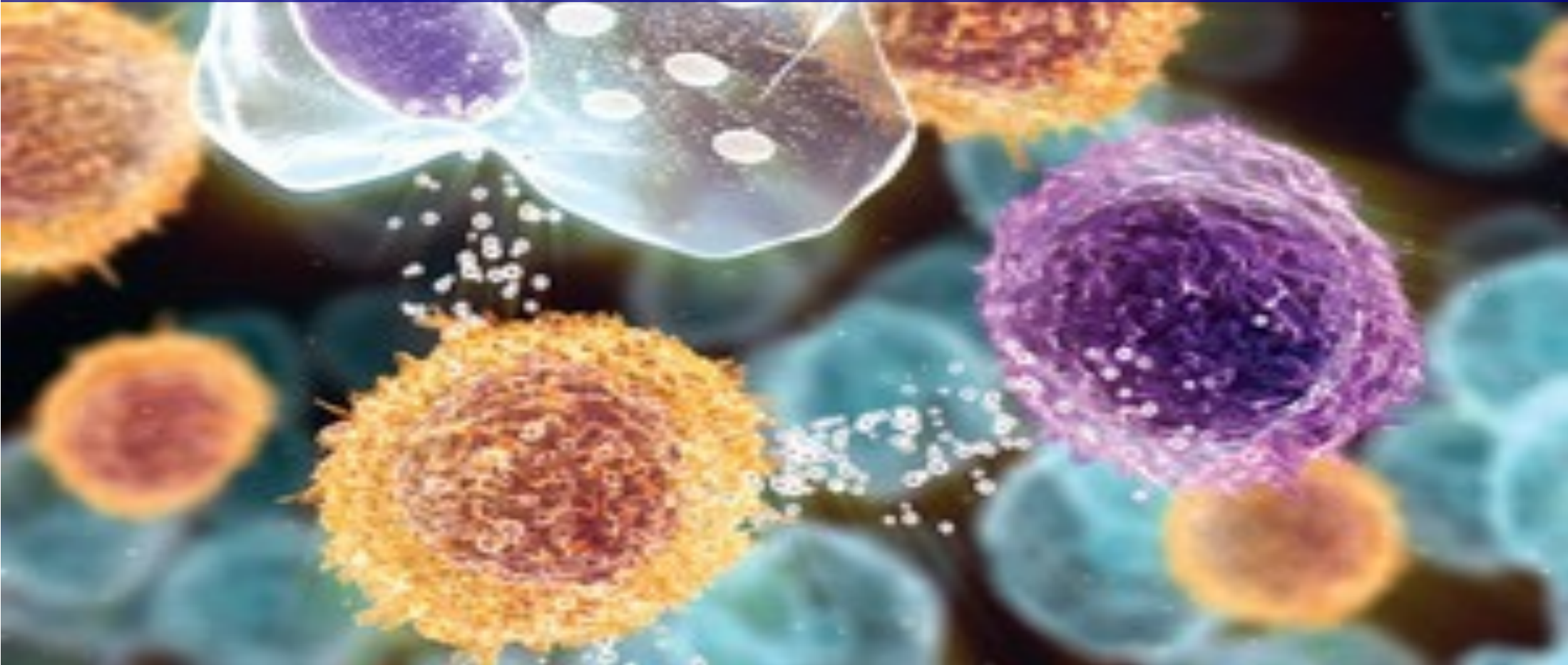
*(André Luiz, Evolução em Dois Mundos, Cap V)*






***“...as células, quando ajustadas ao ambiente orgânico, demonstram o comportamento natural do operário mobilizado em serviço, sob as ordens da Inteligência, comunicando-se umas com as outras sob o influxo espiritual que lhes mantêm a coesão...”***

***(André Luiz, Evolução em Dois Mundos, cap V)***



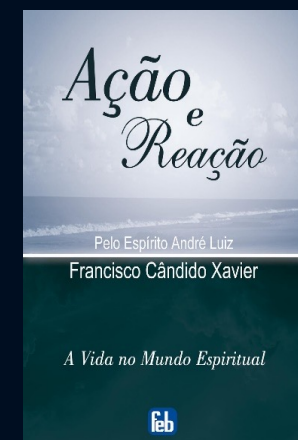


O **pensamento** é a força que, devidamente orientada, no sentido de garantir o nível das entidades celulares no reino fisiológico, **facilita a migração ou lhes acelera a mobilidade** para certos efeitos de preservação ou defensiva, seja na improvisação de **elementos combativos e imunológicos** ou na impugnação aos processos patogênicos com a intervenção da consciência profunda.

Deduz-se, com facilidade, que se é possível a hipnotização da mente humana, com vistas a certos fins, com mais propriedade operar-se-á a **magnetização das entidades corpusculares**, para efeitos determinados, no ajustamento das células.

*(Mecanismos da Mediunidade, Cap. XXII )*

# ZONAS FAVORÁVEIS À ECLOSÃO DE DETERMINADAS MOLÉSTIAS, O QUE É ISSO?

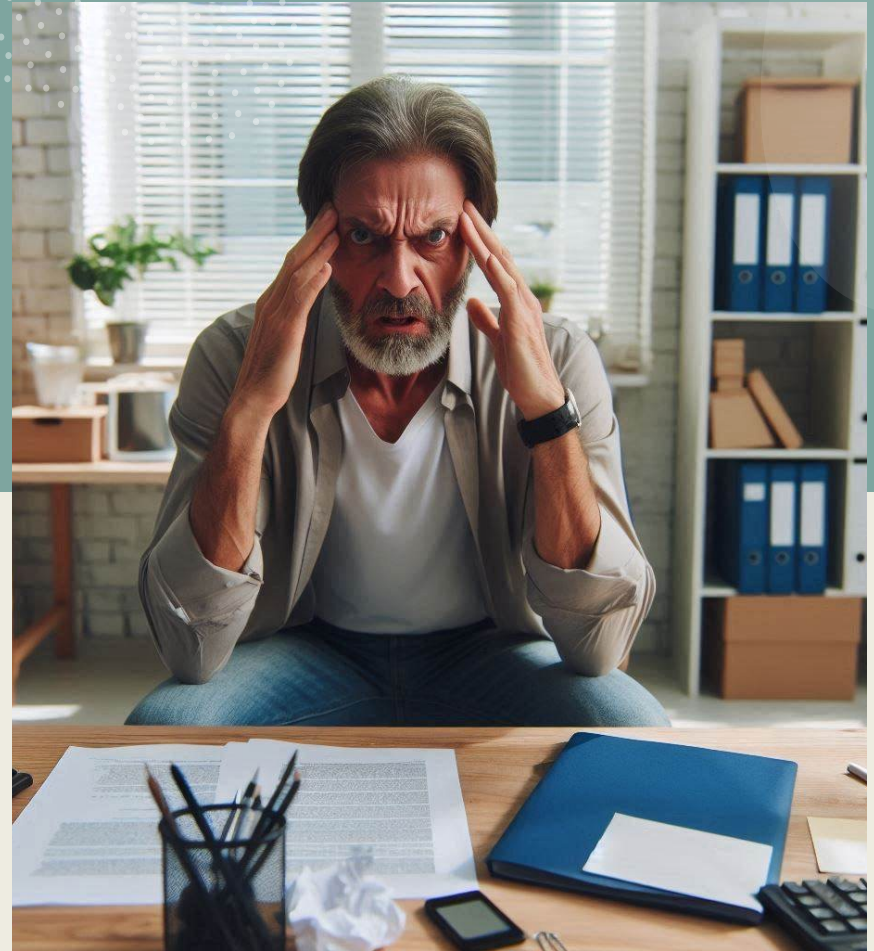


- *"a alma ressurge no equipamento físico transportando consigo as próprias falhas a se lhe refletirem na veste carnal, como zonas favoráveis à eclosão de determinadas moléstias, oferecendo campo propício ao desenvolvimento de vírus, bacilos e bactérias inúmeros, capazes de conduzi-la aos mais graves padecimentos, de acordo com os débitos que haja contraído"...*

*(André Luiz, Ação e Reação, cap 19)*

## Pensamento e Vida – Emmanuel / Chico Xavier Cap. 15 : Saúde

- A cólera e o desespero, a crueldade e a intemperança criam zonas mórbidas de natureza particular no cosmo orgânico, impondo às células a distonia pela qual se anulam quase todos os recursos de defesa, abrindo-se leira fértil à cultura de micróbios patogênicos nos órgãos menos habilitados à resistência.

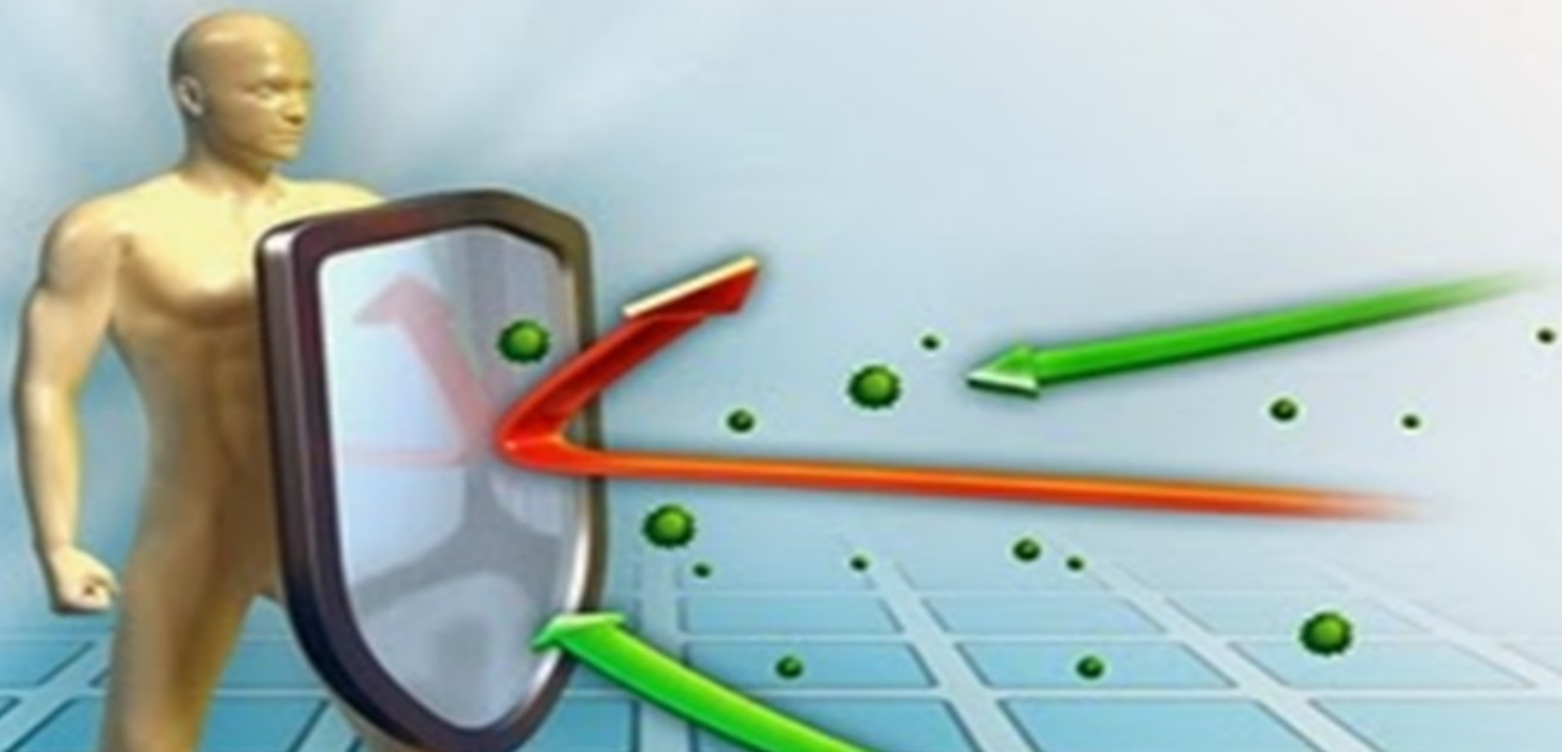


## Pensamento e Vida – Emmanuel / Chico Xavier Cap. 14 : Corpo

- A prática do bem, simples e infatigável pode modificar a rota do destino, de vez que o pensamento claro e correto, com ação edificante, interfere nas funções celulares, tanto quanto nos eventos humanos, atraindo em nosso favor, por nosso reflexo melhorado e mais nobre, amparo, luz e apoio, segundo a lei do auxílio.



# O DOENTE E A CURA



- "... mas também carrega consigo as faculdades de **criar no próprio cosmo orgânico todas as espécies de anticorpos**, imunizando-se contra as exigências da carne, faculdades essas que pode ampliar consideravelmente pela oração, pelas disciplinas retificadoras a que se afeição, pela resistência mental ou pelo serviço ao próximo com que atrai preciosos recursos em seu favor. Não podemos esquecer que o bem é o verdadeiro antídoto do mal."

(André Luiz, Ação e Reação, cap 19)

“Amparo aos outros cria amparo a nós próprios, motivo porque os princípios de Jesus, desterrando de nós a animalidade e orgulho, vaidade e cobiça, crueldade e avareza, e exortando-nos à simplicidade e à humildade, à fraternidade sem limites e ao perdão incondicional, estabelecem, quando observados, a **imunologia perfeita em nossa vida interior, fortalecendo-nos o poder da mente na autodefensiva contra todos os elementos destruidores e degradantes** que nos cercam e articulando-nos as possibilidades imprescindíveis à evolução para Deus.”

*André Luiz, Evolução em Dois Mundos, cap 20, parte 2*

# Pensamento, emoções e espiritualidade: Há relação?







**Obrigado!**